

CLAIM AMENDMENTS

1 - 57. (canceled)

1 58. (currently amended) A method of filling a row of
2 bags, the method comprising the steps of:

3 a) conveying the row of bags horizontally until one of
4 the bags is open upward into alignment underneath a filling
5 apparatus;

6 b) stopping the one bag underneath the filling apparatus
7 and, while the one bag is stopped underneath the apparatus and
8 without vertical displacement of the one bag, thereafter
9 sequentially

10 c) shifting the apparatus from a position wholly above
11 the one stopped bag into a position opening inside the one stopped
12 bag generally at a base of the one stopped bag;

13 d) while raising the apparatus upward to a predetermined
14 upper position with the apparatus still engaged in the one stopped
15 bag

16 d') using a net/volumetric technique and
17 thereby pouring a predetermined volume of
18 the material into the one stopped bag and
19 thereafter

20 d") using a gross-weight technique and thereby
21 monitoring a weight of the one stopped bag
22 and pouring the material into the one

stopped bag until the bag's weight reaches a predetermined desired weight;

e) stopping pouring of the material from the apparatus when the bag's weight reaches the predetermined desired weight;

f) lifting the apparatus out of the one stopped bag;

g) thereafter displacing the one stopped bag horizontally underneath the apparatus; and

h) repeating steps a) through g) with the next bag in the row of bags.

59. (previously presented) The bag-filling method defined in claim 58 wherein the bags are conveyed at a fixed height without substantial vertical displacement.

60. (previously presented) The bag-filling method defined in claim 58 wherein the apparatus is shifted down into the bag at a speed different from that at which it is raised in the bag.

61. (canceled)

62. (previously presented) The bag-filling method defined in claim 58 wherein during step d') the material is poured at a greater volume/time rate than during step d").

1 63. (previously presented) The bag-filling method
2 defined in claim 58, further comprising the step of:

3 i) sealing the bags in a sealing station downstream of
4 the filling apparatus.

1 64. (previously presented) The bag-filling method
2 defined in claim 58, further comprising prior to step c) the step
3 of

4 b') laterally squeezing the bags to open same.

1 65. (previously presented) The bag-filling method
2 defined in claim 64 wherein the bags are laterally squeezed by
3 gripping opposite edges of the bags and then pushing the gripped
4 opposite edges toward each other.

1 66. (previously presented) The bag-filling method
2 defined in claim 58, further comprising the step of
3 aspirating dust from the bag at the filling apparatus.

1 67. (currently amended) An apparatus for filling a row
2 of bags, the apparatus comprising:

3 a filler having a downwardly open tube with a vertically
4 displaceable lower end;

5 discharge means for pouring bulk material down through
6 the tube;

7 transport means for conveying the row of bags
8 horizontally in steps underneath the tube while holding the bags
9 against vertical displacement;

10 drive means for shifting the tube between a position
11 wholly above the bags and a position opening inside the bags
12 generally at a base of the one stopped bag;

13 means for monitoring a weight of a bag underneath the
14 tube; and

15 control means connected to the transport means, discharge
16 means, weight-monitoring means, and drive means for, when each bag
17 is stopped underneath the tube, sequentially

18 a) stopping each bag underneath the filler tube and
19 holding the bag against vertical movement,

20 b) while raising the tube upward until the tube reaches a
21 predetermined upper position still engaged in
22 the stopped bag

23 b') using a net/volumetric technique and
24 thereby pouring a predetermined
25 volume of the material into the one
26 stopped bag and thereafter

b") using a gross-weight technique and thereby monitoring a weight of the one stopped bag and pouring the material into the one stopped bag until the bag's weight reaches a predetermined desired weight,

c) stopping pouring of the material from the tube when the bag's weight reaches the predetermined desired weight,

d) lifting the tube out of the stopped bag, and

e) stepping the row of bags horizontally and thereby

displacing the filled bag horizontally out from underneath the apparatus until the next bag in the row of bags is stopped underneath the tube; and

f) repeating steps a) through e) sequentially with the next bag stopped underneath the tube.

68. (previously presented) The bag-filling apparatus defined in claim 67 wherein the filler has a hopper for the bulk material.

1 69. (previously presented) The bag-filling apparatus
2 defined in claim 67 wherein the filler has
3 a frame;
4 a drive motor on the frame; and
5 a transmission connecting the drive motor to the tube.

1 70. (previously presented) The bag-filling apparatus
2 defined in claim 67 wherein the drive means is of variable speed.

1 71. (previously presented) The bag-filling apparatus
2 defined in claim 70 wherein the drive means shifts the tube
3 downward at a faster speed than it uses to shift the tube upward.

72. (canceled)

1 73. (previously presented) The bag-filling apparatus
2 defined in claim 67 wherein during step b') the material is poured
3 at a greater volume/time rate than during step b").

1 74. (previously presented) The bag-filling apparatus
2 defined in claim 67, further comprising
3 means for sealing the bags in a sealing station
4 downstream of the filler.

1 75. (previously presented) The bag-filling apparatus
2 defined in claim 67, further comprising
3 means for laterally squeezing the bags to open same.

1 76. (previously presented) The bag-filling apparatus
2 defined in claim 75 wherein the means for laterally squeezing
3 includes

4 a pair of grippers engageable at opposite edges of the
5 bags and
6 means for pushing the gripped opposite edges toward each
7 other underneath the tube.

1 77. (previously presented) The bag-filling apparatus
2 defined in claim 67, further comprising
3 means for aspirating dust from the bag at the filling
4 apparatus.

1. 78. A method of filling a row of bags, the method
2. comprising the steps of:

3. a) conveying the row of bags horizontally until one of
4. the bags is open upward into alignment underneath a filling
5. apparatus;

6. b) stopping the one bag underneath the filling apparatus
7. and, while the one bag is stopped underneath the apparatus and
8. without vertical displacement of the one bag, thereafter
9. sequentially

10. c) shifting the apparatus from a position wholly above
11. the one stopped bag into a position opening inside the one stopped
12. bag generally at a base of the one stopped bag;

13. d) while raising the apparatus upward to a
14. predetermined upper position with the apparatus still engaged in
15. the one stopped bag

16. d') using a net/volumetric technique and
17. thereby pouring a predetermined volume of
18. the material into the one stopped bag at a
19. predetermined high volume/time rate and
20. thereafter

21. d'') using a gross-weight technique and thereby
22. monitoring a weight of the one stopped bag
23. and pouring the material into the one
24. stopped bag at a predetermined low
25. volume/time rate smaller than the high

rate until the bag's weight reaches a predetermined desired weight;

e) stopping pouring of the material from the apparatus when the bag's weight reaches the predetermined desired weight;

f) lifting the apparatus out of the one stopped bag;

g) thereafter displacing the one stopped bag horizontally underneath the apparatus; and

out from underneath the apparatus; and

h) repeating steps a) through g) with the next bag in the

row of bags.

79. (new) The method defined in claim 58 wherein during step b') the weight of the one stopped bag and its contents are not monitored.